

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-38 (Cancelled).

39. (New) An apparatus for examining a liquid by titration, comprising

1.1 a light source (2);

1.2 a light sensor (3);

1.3 a measuring head (1) which is to be immersed into the liquid sample to be examined, with an optical fibre which receives and conveys light from the light source, wherein the measuring head (1) comprises a recess (5) with an interruption in the optical fibre into which the liquid to be examined penetrates when a measuring head (1) is immersed;

1.4 wherein the measuring head (1) may be separated from the light source (2) and the light sensor (3); and

1.5 a titration system for the defined addition of a titration liquid into the liquid sample;

and further comprising a drive device (12) for moving the measuring head (1) relative to the sample vessel

(8), at least a part of a determining device (2, 3, 5, 6.1, 6.2, 12, 13) being provided for determining the liquid level of the liquid sample.

40. (New) An apparatus for examining a liquid sample according to claim 39, wherein the apparatus further comprises a measuring system for measuring the pH of the liquid sample.

41. (New) An apparatus for examining a liquid sample according to claim 39, wherein the apparatus further comprises a temperature measuring system for measuring the temperature of the liquid sample.

42. (New) An apparatus for examining a liquid sample according to claim 39, wherein the apparatus further comprises a fluidics system for the defined removal of an amount of the liquid to be examined.

43. (New) An apparatus for examining a liquid sample according to claim 42, wherein the fluidics system comprises an apparatus for calibrating with at least one calibration liquid.

44. (New) An apparatus for examining a liquid sample according to claim 42, wherein the fluidics system comprises cleaning means.

45. (New) An apparatus for examining a liquid sample according to claim 39, wherein an exchangeable sample vessel (8) is provided for receiving the liquid samples.

46. (New) An apparatus for examining a liquid sample according to claim 45, wherein the apparatus comprises a sample-receiving region (7) in which the sample vessel (8) can be arranged below the measuring head (1).

47. (New) An apparatus for examining a liquid sample according to claim 46, wherein the sample-receiving region (7) is constructed from a material selected from the group consisting of stainless steel, titanium oxide, and stainless steel with titanium oxide coating.

48. (New) An apparatus for examining a liquid sample according to claim 46, wherein the sample-receiving region (7) comprises a device which disinfects it using UV light.

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49. (New) An apparatus for examining a liquid sample according to claim 45, wherein a rotatable sample plate (9) with an indirect drive is provided for the sample vessel (8).

50. (New) An apparatus for examining a liquid sample according to claim 39, wherein the measuring head (1) is a disposable article.

51. (New) An apparatus for examining a liquid sample according to claim 50, wherein a device which detects a measuring head (1) that has already been used is provided.

52. (New) An apparatus according to claim 39, wherein the measuring head (1) comprises a holding device (49, 50) for holding on a socket of the apparatus, the holding device comprising a holding means (50), which is constructed in such a way that the holding device (49, 50) can only be used once.

53. (New) An apparatus according to claim 52, comprising an integral connection component with a set breaking point as a holding means (50).

54. (New) An apparatus according to claim 39, wherein the measuring head (1) is constructed in such a way that it conveys the light received from the light source (2) to the light sensor (3).

55. (New) An apparatus according to claim 39, wherein the measuring head (1) is constructed in such a way that it conveys the light received by the light source along a light path, adjacent to which the sensor is arranged, but in which the sensor is not directly arranged.

56. (New) An apparatus according to claim 39, wherein the recess (5) represents a part of the determining device (2, 3, 5, 6, 6.1, 6.2, 12, 13).

57. (New) An apparatus according to claim 42, wherein the fluid duct (51) of the fluidics system is constructed in the measuring head (1).

58. (New) An apparatus according to claim 57, wherein the fluid duct (51) is closed via a sealing stopper which is penetrated by a line portion (41) of the fluidics system on the measuring head receiving side in the measuring position of the measuring head (1).

59. (New) An apparatus according to claim 39, wherein a fluid duct of the titration system is constructed in the measuring head (1).

60. (New) An apparatus according to claim 39, further comprising a stirring device (9, 10, 57) for stirring the liquid sample, the measuring head (2) comprising at least one flow component for cooperating with the liquid sample.

61. (New) An apparatus according to claim 60, further comprising at least one flow blade (57) as a flow component.

62. (New) A method for examining a liquid sample by titration, wherein an apparatus for examining a liquid sample by titration in accordance with claim 39 is used.

63. (New) A method for examining a liquid sample by titration, comprising the following steps:

- providing (35) the liquid sample;
- measuring (36) the liquid level of the liquid sample by driving a measuring head (1) into the liquid sample from above;

- determining (4) the concentration of at least one type of ion of the liquid sample; and
- performing (43) crystallisation measurement by feeding a crystal former into the liquid sample and measuring crystal formation.

64. (New) A method according to claim 63, wherein crystal formation takes place by measuring the transparency of the liquid sample after feeding.

65. (New) A method according to claim 63, further comprising the step of inserting (34) a new disposable measuring head (1) prior to feeding.

66. (New) A method according to claim 63, further comprising the step of cleaning (37) a concentration-determining sensor (24) prior to concentration determination (40).

67. (New) A method according to claim 66, further comprising the step of calibrating (38) a concentration-determining sensor (24) prior to concentration determination (40).

68. (New) A method according to claim 63, further comprising the step of stirring (39) the liquid sample prior to concentration determination (40).

69. (New) A method according to claim 63, further comprising the step of calculating (44) a sample parameter from the measured values with the concentration and the transparency.

70. (New) A method according to claim 63, further comprising the step of determining the pH of the liquid sample.

71. (New) A method according to claim 63, further comprising the step of determining the temperature of the liquid sample.

72. (New) A measuring head (1) for use in an apparatus according to claim 39, comprising a recess (31) by which an interface from the material of the measuring head (1) to the open region in the recess (31) is formed such that crosstalk between individual regions of ray positioning in the measuring head (1), which reduces the accuracy of measurement, is avoided.